



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2014-0128; Directorate Identifier 2013-NM-133-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for The Boeing Company Model 777 airplanes equipped with Rolls-Royce Trent 800 series engines. This proposed AD was prompted by reports of in-flight separation of the aft plug from the forward plug, which are the two parts of the turbine exhaust plug assembly. This proposed AD would require installation of a serviceable turbine exhaust plug assembly (for certain airplanes), and a general visual inspection (for certain airplanes) to determine the diameter of the bolt used at the forward and aft plug interface, and applicable corrective actions. We are proposing this AD to prevent separation of the forward plug from the aft plug of the turbine exhaust plug assembly, which could result in parts departing the airplane and hitting the empennage or hitting a person on the ground, and destabilizing the airplane during a critical flight phase; parts remaining on a runway could cause damage to another airplane.

**DATES:** We must receive comments on this proposed AD by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, Seattle Aircraft Certification Office (ACO) FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6501; fax: (425) 917-6590; email: [kevin.nguyen@faa.gov](mailto:kevin.nguyen@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include “Docket No. FAA-2014-0128; Directorate Identifier 2013-NM-133-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We received reports of in-flight separation of the aft plug from the forward plug, which are the two parts of the turbine exhaust plug assembly. A subsequent investigation showed that some of the interface bolts were found loose or missing. The turbine exhaust plug assembly was sent for analysis and it was found that the remaining bolts had less than the necessary minimum run-on torque value. It was also found that the operator of the analyzed turbine exhaust plug assembly had disassembled it a minimum of three times during maintenance actions. Repeated assembly and disassembly causes the locking property of the nut on the nutplate to wear out and subsequently let the bolts become loose or removed in service. This condition, if not corrected, could result in parts departing the airplane and hitting the empennage or hitting a person on the ground, and destabilizing the airplane during a critical flight phase; parts remaining on a runway could cause damage to another airplane.

### **Relevant Service Information**

We reviewed Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for Docket No. FAA 2014-0128 .

### **FAA’s Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

### **Proposed AD Requirements**

This proposed AD would require installation of a serviceable turbine exhaust plug assembly (for certain airplanes), and a general visual inspection (for certain airplanes) to determine the diameter of the bolt used at the forward and aft plug interface, and applicable corrective actions.

The phrase “corrective actions” is used in this proposed AD. “Corrective actions” are actions that correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

### **Differences Between the Proposed AD and the Service Information**

The applicability of the proposed AD and the effectivity of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, both include Model 777 airplanes equipped with Rolls-Royce Trent 800 series engines. Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, however, is further limited to airplanes with line numbers before line position 470. Because we have determined that these engines are interchangeable among the Model 777 airplane fleet, this proposed AD would apply to all line positions of Model 777 airplanes equipped with

Rolls-Royce Trent 800 engines, and would prohibit installation of non-serviceable turbine exhaust plug assemblies on any affected airplane.

Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, does not specify a compliance time for accomplishing one of the corrective actions. In Table 2 of paragraph 1.E., “Compliance,” of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, the condition “Only 1/4 inch diameter bolts are found installed at all 33 locations forward and aft plug interface” has a corrective action to “reidentify the forward and aft plug” with a compliance time of “none.” However, in paragraph (g)(2) of this proposed AD, the compliance time is “before further flight” for doing all applicable corrective actions, which includes reidentifying the forward and aft plug.

Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, specifies to contact the manufacturer for instructions on how to repair certain conditions, but this proposed AD would require repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

### **Costs of Compliance**

We estimate that this proposed AD affects 35 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Installation	5 work-hours X \$85 per hour =\$425	\$0	\$425	\$14,875
General visual inspection	2 work-hours X \$85 per hour =\$170	\$0	\$170	\$5,950

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need this replacement:

### On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement (replacing the 3/16 inch bolts with 1/4 inch bolts)	5 work-hours X \$85 per hour = \$425	\$0	\$425

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This proposed regulation is within the scope of that

authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2014-0128; Directorate Identifier 2013-NM-133-AD.

**(a) Comments Due Date**

We must receive comments by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F series airplanes; certificated in any category; equipped with Rolls-Royce Trent 800 series engines.

**(d) Subject**

Air Transport Association (ATA) of America Code 78, Engine Exhaust.

**(e) Unsafe Condition**

This AD was prompted by reports of in-flight separation of the aft plug from the forward plug, which are the two parts of the turbine exhaust plug assembly. We are issuing this AD to prevent separation of the forward plug from the aft plug of the turbine exhaust plug assembly, which could result in parts departing the airplane and hitting the empennage or hitting a person on the ground, and destabilizing the airplane during a critical flight phase; parts remaining on a runway could cause damage to another airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Installation and General Visual Inspection**

At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012,



except as provided by paragraph (i) of this AD, do the applicable actions specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012.

(1) For airplanes identified as Group 1, Configuration 1, in Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012: Install a serviceable turbine exhaust plug assembly.

(2) For airplanes identified as Group 1, Configurations 2 and 3, in Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012: Do a general visual inspection to determine the diameter of the bolt used at the forward and aft plug interface, and before further flight, do all applicable corrective actions.

(3) For airplanes listed in paragraph (c) of this AD that are not listed in the “Effectivity” section of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012: Do a general visual inspection to determine if a serviceable turbine exhaust plug assembly is installed. If a serviceable turbine exhaust plug assembly is not installed, before further flight, install a serviceable turbine exhaust plug assembly.

**(h) Definition of Serviceable Assembly**

For purposes of this AD, an acceptable serviceable turbine exhaust plug assembly must meet the conditions specified in paragraph (h)(1) or (h)(2) of this AD.

(1) A new assembly with part number 314W5520-22.

(2) A serviceable assembly as defined in the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012; except, for any assembly on which the actions specified in Part 2 or Part 3 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, are done, and Boeing Special Attention Service

Bulletin 777-78-0051, Revision 3, dated August 23, 2012, specifies to contact Boeing for repair instructions, this AD requires repair before further flight using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

**(i) Exception to Service Information Specifications**

Where paragraph 1.E., “Compliance,” of Boeing Special Attention Service Bulletin 777-78-0051, Revision 3, dated August 23, 2012, specifies a compliance time “after the Revision 3 date of this service bulletin,” this AD requires compliance within the applicable time after the effective date of this AD.

**(j) Parts Installation Limitation**

As of the effective date of this AD, only a serviceable turbine exhaust plug assembly may be installed on any airplane.

**(k) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (m) of this AD. Information may be emailed to: [9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto:9-ANM-Seattle-ACO-AMOC-Requests@faa.gov).

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must

meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(I) Related Information**

(1) For more information about this AD, contact Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, Seattle Aircraft Certification Office (ACO) FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 917-6501; fax: (425) 917-6590; email: [kevin.nguyen@faa.gov](mailto:kevin.nguyen@faa.gov).

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on February 24, 2014.

Jeffrey E. Duven,  
Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

[FR Doc. 2014-04568 Filed 02/28/2014 at 8:45 am; Publication Date: 03/03/2014]